



Butterfly Conservation Wales
Gwarchod Glöynnod Byw Cymru

Early successional habitat
with bare ground, Dingy
Skipper and Six-spot Burnet.



Bare Ground for Butterflies and Moths





Examples of bare ground habitat.



Bare ground is an important feature of many habitats and is vital to the continued survival of many of our threatened butterflies and moths.

This leaflet explains the importance of bare ground for butterflies and moths and describes how to manage land to create and maintain this important feature and safeguard many threatened species.

Bare ground

Bare ground can be present in many habitats and helps create different microclimates and microhabitats. Bare ground may be

present due to soil slippage, rock exposure through shallow soil, animal disturbance, human disturbance (e.g. coppicing and ride management), burning, fire, drought and wind damage. Bare ground can also be present on brownfield sites as well as post-industrial sites, such as disused quarries, railways, mine spoil, sand and gravel pits, where soil has been removed or modified by previous use or the addition of substrates, such as industrial spoil.

Bare ground features in many habitats have declined, leading to the loss of important colonies of rare butterflies and moths. The widespread use of fertiliser on grasslands has led to taller, more competitive plants replacing low-growing wildflowers. The absence of management has led to open habitats reverting to rank grassland, scrub and woodland.

What butterflies and moths need

To complete their life cycles butterflies and moths, in general, require **sheltered**, warm, sunny places as adults, often with a **nectar** source as well as a suitable place to lay their eggs. The larvae will then require plentiful **foodplants**, often growing in the right conditions (e.g. height of vegetation, adjacent bare ground, shelter or specific growth forms such as large, lush plants), and will move to a sheltered spot to pupate before emerging as an adult. **Overwintering sites** for hibernating eggs, caterpillars, chrysalises or adults (e.g. dense vegetation, grass tussocks, scrub or ivy) are also very important. All these elements need to occur in relatively close proximity.

For highly threatened species in particular, understanding where they spend each of their life stages, and at what time of year, can be key to effective conservation. It is rare that nectar is the factor limiting population growth, and suitable habitat for egg-laying and larval development is usually crucial.



Abundance of nectar-rich wildflowers and a variety of plant mosaics including tall and short plants, plus areas of bare and uneven ground. All are important.



Grizzled Skipper egg cases on Wild Strawberry growing over a stone.



Birds-foot Trefoil in an early-successional sward.

Importance of bare ground for butterflies and moths

Bare ground provides **localised warm areas** as it warms up very readily in the sun. Warmth is very important for butterflies and moths; this is especially true of our spring-flying species, e.g. Dingy Skipper and Grizzled Skipper, that need to develop rapidly in cool spring weather. Plants growing over, or immediately adjacent to, bare ground are significantly warmer than the surrounding vegetation. Eggs laid, or caterpillars feeding, on these plants are able to develop quickly. Bare ground is important for species such as the Grayling, which spends much time basking.

Bare ground also provides **germination sites for plants** – seedling plants are very susceptible to competition from larger plants nearby. Areas of bare soil can reduce this. Many plants do not establish readily in well-established sward, including many caterpillar foodplants such as Common Bird's-foot Trefoil, Kidney Vetch, Wild Strawberry and fine grasses. Insects associated with such plants (e.g. Six-spot Burnet, Small Blue and Grizzled Skipper) depend on a year-on-year supply of suitable host plant and hence on continuity of bare ground within an overall area. The role of bare ground in starting plant succession is therefore very important.



Grizzled Skipper



Six-spot Burnet



Small Blue



A scrape creates bare ground.

Creating bare ground habitat and maximising opportunities

Habitats are dynamic and bare ground will not remain forever as plants colonise and spread. It is important that new areas of bare ground are created at the same time, to balance the progressive loss of older ones. Some management options are outlined below.

- Open habitats can be restored by rotational ground disturbance by scarification or even turf-stripping of areas of closed (little or no bare ground) grassland or scrub.
- On sites such as brownfields, management should be rotational (piecemeal), with only parts of a site managed in a single year to maintain a habitat mosaic.
- Regular, well-planned management is required to provide continuity of short-lived habitat conditions.
- Butterfly banks and scrapes can be created to add a variety of aspects, incorporate bare ground, encourage the growth of important butterfly and moth larval foodplants and improve habitat connectivity. Seeding and plug-planting these features is beneficial as there is no guarantee that they will colonise naturally. Downloadable factsheets are available from Butterfly Conservation's website butterfly-conservation.org and butterfly-conservation.org/our-work/reports-and-factsheets/habitat-creation.

- Creating butterfly walls of closely spaced brick and rubble pieces or laying them in floors can encourage egg-laying in foodplant-rich areas.
- Clearing woodland plots (e.g. by coppicing) and occasional disturbance along wide sunny rides (by scarification or general machinery disturbance) can create areas of bare ground for breeding.
- Suitable conditions for some species can be maintained by low to moderate stock grazing, especially winter cattle, which creates patches of bare ground and short vegetation.
- Avoid the use of pesticides, except to control invasive plants.
- Nutrients are bad for butterflies and moths – topsoil and fertilisation should be avoided. Fewer nutrients mean less management and more biodiversity.

These management recommendations, whilst focusing on butterflies and moths, will encourage a wide range of invertebrates such as beetles, solitary bees and wasps, and other wildlife.



A butterfly wall is another option for creating bare ground.

About Butterfly Conservation

Butterfly Conservation is a national charity dedicated to saving butterflies, moths and their habitats.

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